

Serial No. 10/762,083

Claim 1 (currently amended) An aircraft comprising

- a) a fuselage
- b) thin supersonic wings on the fuselage, the wings having tips, and sharp leading edges,
- c) there being trailing edge flaps carried by the wings,
- d) said flaps configured to provide flap deflection to simultaneously control wing twist and to reduce drag, when the aircraft is operated at subsonic flight conditions,
- e) and said wings have low sweep angularity relative to the fuselage to provide substantial laminar airflow, the wings further characterized as having relatively low torsional stiffness,
- f) there being ~~at least four~~ multiple of said trailing edge flaps located in spanwise sequence along each wing, and wherein at subsonic flight conditions the flap or flaps located progressively relatively closer to the fuselage has or have progressively a greater downward deflection relative to the wing than the flap or flaps relatively closer to the wing tip, and at supersonic flight conditions all of said flaps have relatively faired positions relative to the wing[[.]]_L

g) and wherein the wings are further characterized as having

- x₁ center of pressure, at subsonic flight conditions,
- x₂ a torsional elastic center,
and wherein in the absence of said flap deflection at subsonic flight conditions said center of pressure is substantially forward of said torsional elastic center, tending to create moments of force acting to twist the wing tip to higher angles of attack,

h) and wherein in the absence of said provided flap deflection said center of pressure at near about half of wing chord dimension is substantially closer to said torsional elastic center, under supersonic flight conditions, than under subsonic flight conditions,

i) and wherein with said provided flap deflection the center of pressure at near about half of wing chord dimension is substantially closer to said torsional elastic center under subsonic flight conditions, than in the absence of said provided flap deflection,

Serial No. 10/762,083

j) and wherein said flaps provide means including camber for reducing subsonic wing leading edge vortex drag, and reducing compressibility drag,

k) and including means to control flap deflection angularity to reduce said twist.

Claims 2 - 7 (cancelled).

Claim 8 (currently amended). The aircraft of claim 1 including wherein said means to control flap deflection angularity to reduce twist includes a control system or systems to maintain the flaps positioned to control twist and drag, at subsonic flight conditions.

Claim 9 (original). The aircraft of claim 8 wherein the control system or systems is configured to monitor flight conditions including air speed, and to position the flaps.